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AMONG MY AUTOGRAPHS.

By DAVID EUGENE SMITH, Columbia University.

22. SIR DAVID BREWSTER AND THE STEREOSCOPE.

To students of mathematics Sir David Brewster (1781–1868) is best known for his *Life of Newton* (1828, greatly enlarged in 1855); to the physicist he is best known for his work in optics; and to the average citizen he is not known at all, although to him is due the kaleidoscope (1816), the major part of the invention of the stereoscope, and probably the first suggestions of the opera glass.

In connection with the invention of the stereoscope (1849), which had been to some slight degree anticipated by Wheatstone (1838), and which was greatly improved by our Dr. Oliver Wendell Holmes, he had a just grievance against his one-time friend, the Abbé Moigno (1804–1884), of Paris, a physicist and mathematician of considerable ability, and the founder of *Cosmos* (1852). Moigno had not given Brewster the credit which the latter felt was his due, and as a result a protest had been made. Moigno's failure to publish the correspondence in full in *Cosmos* resulted in a number of heated communications from Brewster, several (and probably all) of which are now in my collection. One of them, now published I believe for the first time, is given below and shows that the President of the Peace Congress, held five years earlier in London, was prepared for battle when he felt that his rights of discovery were not duly recognized.

The letter is as follows:

Dear Abbé Moigno,

I am very unwilling to do anything disagreeable to you, but *truth must be told* and *justice done* whatever be the cost.

By your delay in publishing a reply to an article in *Cosmos*, and your not having fulfilled the promise you lately made to me in Paris to publish it, you have driven me to write the enclosed pages which are still *unpublished and private*.

I will, of course, strike out the observations *which refer to you personally* if you publish, without comment, the communication I previously sent you.

Mr. Wheatstone, *who knows well that no stereoscope with prisms was ever made for me*, has *allowed you* to continue in the belief which you erroneously cherished, and has thus acted a most dishonest part.

The idea of a *Refracting Stereoscope* was *first* given by me, and *first* published by me in the article from the *Phil. Mag.* which I gave you in 1850.

I call your attention especially to the hidden, or rather palpable meaning of your phrase

Le croirait on?

and trust that as a man of honour you will do me justice. I am,

Ever Most Truly yrs.

D. BREWSTER

St. Leonards College

ST. ANDREWS, May 8th, 1856.

23. CLIFFORD'S GENIUS SHOWN AS A BOY.

Newton's remark that if Cotes had lived "we might have known something" may also be applied to the case of William Kingdon Clifford, one of the most promising of the British mathematicians of his day. Born at Exeter in 1845,

he died at Madeira, where he had gone in the vain hope of recovering his health, at the age of thirty-four. He was only twenty-six when he was made professor of applied mathematics at University College, London, and only twenty-nine when he was elected a Fellow of the Royal Society. His contributions to the study of the graphic methods of Möbius, to the theory of Riemann's surfaces, and to the development of biquaternions, together with his *Common Sense of the Exact Sciences*, are all well known, as is the edition of his *Mathematical Papers* by Mr. Tucker in 1882.

Among several of his autograph letters now in my collection is one of particular interest, written on St. Giles's Day (September 1) 1863, just before he entered Trinity College, Cambridge. It shows in a very personal manner the nature of his interests at an age when most boys are concerned with pursuits that are quite in contrast with those which he sets forth.

The letter is as follows:

9 Park Place, Hill's Court,
EXETER, S:Giles, 1863.

My dear Sir

I thank you very much indeed for your kindness, and am sorry that I should have given you the trouble to write to me. I have been on a walking tour in the North of Devon, or I should have written long before. By to-morrow I hope to send you something, and will do what I can to follow out your kind suggestions; but I am a very junior reader myself. I have had in my mind almost from the time I began to fly kites (I have not yet left off) the problem of finding the form of a kite-string under the action of the wind. On a rough trial the other day, the intrinsic equation seemed not very difficult to obtain; if I get at any result, I will send it you to-morrow. I have been trying to construct a second interpretation of mechanical equations, similar to that of tangential coordinates, but have failed hitherto. Being a firm believer in the duality of symbols, I should look upon complete failure as a proof that our symbolical system is wrong. You will be amused by my visionary attempt at obtaining a method of inventing problems by the dozen.

With best thanks, believe me to remain,

Yours very sincerely

+ W: K: CLIFFORD.

QUESTIONS AND DISCUSSIONS.

EDITED BY C. F. GUMMER, Queen's University, Kingston, Ont., Canada.

A number of questions proposed at various times preceding the present year are reprinted below in the hope that fresh interest may be aroused in them. Some of these have already called forth replies, as indicated in the notes, and in several cases very profitable discussions have arisen; but the questions have still to be completely settled.

At the same time the editor hopes that there will continue to be a lively flow of discussion on new matters. The unfortunate delay in the appearance of recent numbers of the MONTHLY has probably interrupted to some extent the correspondence of this department; and the consequent speeding up in publication which is now looked for calls for a proportionate acceleration in the supply of contributed material. The function of these columns is to afford opportunity for the exchange of views of all possible types; and this end may be furthered by the number, variety, and suggestiveness of questions proposed, and by a liberal supply of answers and discussions on both old and new topics.